**Shaikh Salma Manjar**

**PRACTICAL NO:03**

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**Part A**

**AIM: Create a table employee having dept\_id as number datatype and employee\_spec as XML datatype(XML\_Type). The employee\_spec** is **a schema with attributes emp\_id**, **name, email**, **acc\_no, managerEmail, dataOf Joning. Insert 10 tuples into employee table. Fire the following queries on XML database**.

**THEORY**:

**What is XML Database?**

XML **Database** is used to **store** huge **amount** of information **in** the XML format. As the **use** of XML **is** increasing in every field, it **is** required to have a secured place to store the XML documents**. The** data stored in the **database can** be queried **using XQuery**, serialized**,** and exported into **a** desired **format**.

**XML Database Types**

There are two major types of **XML** databases

**✔ XML-enabled**

✔ Native XML **(NXD**)

**XML - Enabled Database**

XML **enabled database is** nothing **but the** extension provided **for** the conversion of XML document. This is a relational database, where data is stored in tables consisting **of rows and columns**. **The tables** contain set **of** records, **which** in turn **consist** of fields.

**Native XML Database**

**Native** XML **database** is based **on the** container rather **than table format**. It can store **large** amount **of** XML document and data. Native XML database is queried by the **XPath-**expressions.

Native XML database **has** an advantage over **the** XML-**enabled** database**. It is** highly capable to store**,** query and maintain the XML document than **XML**-**enabled** database.

**Queries:**

a) Retrieve **the** names of employee.

**b**) Retrieve the **acc\_no** of **employees**.

c) Retrieve **the names,** acc\_no**,** email of employees.

d) Update the 3rd from the table and display the name of an employee.

**e)** Delete 4th record from **the** table.

**SQL> create** table xmlemp(deptid number(5), emp\_spec XMLType**)**; Table **created**.

SQL> **insert** into xmlemp values(001,XMLTYPE('**<**Emp Id="1">

**2 <**Name> Annie </Name>

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3 **<Email>** annie@gmail.com </Email**>**

4 <Acc\_no>1234</**Acc\_no**>

5 <MngrEmail**>**Sam@gmail.com**<**/**MngrEmail**>

**6** <**DOJ**>15**-**Jan-1992</DOJ>

**7** </Emp>'));

**SQL**> insert into xmlemp values (002,XMLTYPE('<Emp Id="2">

2 <Name> Sunny </Name>

**3** <Email> sunny@gmail.com </Email**>**

4 <Acc\_no>5678**<**/Acc\_no>

5 <MngrEmail**>**Sam@gmail.com**<**/**MngrEmail**>

6 <**DOJ**>**15-**Jan-1990</DOJ>

7 </Emp>'))

8/

SQL> insert into xmlemp values (003,XMLTYPE**('**<Emp Id=**"3"**>

**2** <Name> **Jimmy <**/Name>

3 **<**Email> jimmy@gmail.com </Email>

4 <Acc\_no>8911</**Acc\_no**>

5 <MngrEmail**>**Sam@gmail.com</**MngrEmail**>

6 **<**DOJ**>**24-Apr-1993**<**/DOJ>

**7** <**/**Emp>'))

8/

SQL> insert into xmlemp values (**004**,XMLTYPE('<Emp Id="4">

2 **<**Name> **Mary** </Name>

3 <Email> Mary@gmail.com **</**Email>

4 <**Acc\_no**>1112</**Acc\_no**>

5 <MngrEmail**>**Sam@gmail.com<**/**MngrEmail>

6 **<DOJ**>14**-**Jun-1993</DOJ>

7 </Emp>'))

8 **/**

SQL> **insert** into xmlemp values**(005**,XMLTYPE('**<Emp** Id=**"5"**>

2 <Name> Harry <**/**Name>

3 <Email> Harry@gmail.com </Email**>**

4 <Acc\_no>1314</Acc\_no>

5 <**MngrEmail**>Sam@gmail.com</MngrEmail>

6 <DOJ>24-Aug-1992</DOJ>

**7** </Emp>'))

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**SQL>** select \* **from** xmlemp**;**

**DEPTID**

**EMP\_SPEC**

**1**

<**Emp** Id=**"1**">

**<**Name> Annie </Name>

<Email> annie@gmail.com </Email> <Acc\_no

**2**

<Emp Id=**"2**">

**<**Name**>** Sunny </Name>

**DEPTID**

EMP\_SPEC

<Email**>** sunny@gmail.com </Email>

<Acc\_no

3

<Emp Id=**"3"**>

**<**Name> Jimmy **<**/Name>

<Email> jimmy@gmail.com </Email>

<Acc\_no

**DEPTID**

EMP\_SPEC

**4**

<Emp Id="4">

**<**Name> Mary **</**Name>

<Email> Mary@gmail.com </Email> <Acc\_no>1

**5**

<Emp Id="5">

**<**Name> Harry </Name**>**

**DEPTID**

EMP\_SPEC

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<Email> Harry@gmail.com **</Email>**

<Acc\_no

**a) Retrieve the names of employee with single slash**.

**SQL>** select e.emp\_spec.extract('Emp/Name/text()') "Employee Name" from xmlemp e;

Employee Name

Annie

Sunny

Jimmy

Mary Harry

**b) Retrieve the names of employee with double slash**.

SQL> select e.emp\_spec.extract('//Name/text()') "Employee Name" from xmlemp e; Employee **Name**

Annie

Sunny

Jimmy

**Mary Harry**

**c) Retrieve the acc\_no of employees**.

SQL**> select** e.emp\_spec.extract('//Acc\_no/text()') "Account Number**"** from xmlemp e;

Account Number

**1234**

5678

8911

1112

**1314**

**d) Retrieve the names, acc\_no, email of employees**.

**SQL> select** e.emp\_spec.extract('//Name**/**text()') "Employee Name",

2 e.emp\_spec.extract('Emp/Acc\_no/text()") "**Account** Number",

3 e.emp\_spec.extract('Emp/Email/text()") "Email" from xmlemp e;

Employee Name

Account Number

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**Email**

Annie

**1234**

annie@gmail.com

**Sunny 5678**

sunny@gmail.com

Employee **Name**

**Account** Number

**Email**

Jimmy

**8911**

jimmy@gmail.com

Mary 1112

Employee **Name**

Account Number

Email

Mary@gmail.com

Harry **1314**

**Harry@gmail.com**

**e)Update the 3rd record from the table and display the name of an employee**. SQL> update xmlemp e set

emp\_spec**=**updatexml(emp\_spec,'Emp/Name**/**text()','Anny**')** where e.emp\_spec.extract('//Acc\_no/text()').getstringval()='1314';

1 row updated.

SQL> select \* **from** xmlemp;

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**DEPTID**

**EMP\_SPEC**

**1**

<Emp Id="1">

**<**Name> Annie </Name>

<Email> annie@gmail.com **<**/Email> <**Acc\_no**

2

<Emp Id**="2"**>

**<Name>** Sunny <**/**Name>

DEPTID

EMP\_SPEC

<Email> sunny@gmail.com </Email>

**<Acc\_no**

3

<Emp Id=**"3"**>

**<**Name> **Jimmy** </Name>

**<**Email> jimmy@gmail.com </Email>

<**Acc\_no**

**DEPTID**

**EMP\_SPEC**

4

<Emp Id**=**"4">

<Name> **Mary** </Name**>**

<Email> Mary@gmail.com </Email> **<**Acc\_no>1

**5**

<Emp Id**="**5">

**<**Name>Anny<**/**Name>

DEPTID

EMP\_SPEC

**272**

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<Email> Harry@gmail.com **</Email>** <**Acc\_no**>13

f**) Delete 4th record from the table**.

**SQL> delete from** xmlemp e where

e.emp\_spec.extract('//Acc\_no/text()').getstringval()='5678';

**1 row** deleted.

**SQL> select \*** from **xmlemp;**

**DEPTID**

**EMP\_SPEC**

**1**

<Emp Id="1">

**<**Name> Annie </Name>

<Email> annie@gmail.com </Email> <Acc\_no

3

<Emp Id=**"3"**>

**<**Name> Jimmy <**/**Name>

**DEPTID**

**EMP\_SPEC**

<Email> jimmy@gmail.com </Email> **<Acc\_no**

**4**

<Emp Id="4">

**<Name**> Mary </Name>

<Email> **Mary@gmail.com** </Email>

<**Acc\_no**>1

**DEPTID**

**EMP\_SPEC**

--

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**5**

<Emp Id=**"5">**

**<Name**>**Anny<**/**Name**>

<Email> Harry@gmail.com <**/**Email**>**

<**Acc\_no**>13

**Part B**

**Create a table candidate having cand\_id as varchar2 datatype and biodata as XML datatype (XML type). The biodata** is **a schema with attributes**

**Name, address, skill - compskill - 1) language 2) networking, expr - 1) prog 2) prjmgr, objectives. Fire the following queries on XML database**

**Queries:**

a) Display candidate name **who is good in** java and having experience more than 5 years

b**)** Display candidate having **project** manager level experience

c) **Display** name and skill of all candidates

d) Delete record for address **=** Worli

e) Update experience **of a particular** candidate

SQL> create **table** candidate**(**cand\_id number,biodata xmltype);

**Table created**.

SQL> Insert into candidate values (01**,**XMLTYPE('<EMP ID="1">

**2 <**name>Anjali</name>

**3** <address**>anjali3@gmail.com</address**>

**4 <**skill>

**5 <**compskill**>**

6 <lang>C++</lang>

**7 <**os>Window</os>

8 </compskill>

9 <**/**skill>

10 <expr**>**

11 <programer>**2**</programer>

**12 <**projmngr>1</projmngr>

**13** </expr**>**

14 <**objective>become success** full</objective>

15 **</EMP**>'));

SQL>Insert into candidate values(**02,**XMLTYPE('**<EMP ID**="2">

**2 <**name>Harry<**/**name>

**3 <**address**>**Thane</address**>**

**4** <skill>

5 **<**compskill>

6 <lang**>java**<**/**lang**>**

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**7 <os>**Window</**os>**

8 </compskill**>**

9 </skill>

**10** <**expr>**

11 **<**programer>4<**/**programer>

**12 <**projmngr>5</projmngr>

13 </expr**>**

14 <objective**>**become **success** full</**objective>**

**15 <**/EMP>'));

SQL>Insert into candidate values (03**,**XMLTYPE('<EMP ID**="**3">

**2** <name>Samar<**/**name>

**3** <address>Nerul</address**>**

**4 <**skill>

5 <compskill>

6 <lang**>c<**/lang**>**

**7** <os**>**Window</os>

8 </compskill>

9 <**/**skill>

**10 <expr>**

11 <programer**>**3</programer>

**12** <projmngr**>**4</projmngr**>**

**13** </expr>

14 <objective**>become success** full</objective>

**15** </EMP>'));

SQL>Insert **into candidate** values**(04,**XMLTYPE('<EMP **ID=**"4">

**2 <name>Sunny**<**/**name**>**

**3** <address**>**Kalyan</address**>**

4 <skill>

**5 <**compskill>

6 <lang>csharp</lang**>**

**7 <os**>Window</**os>**

**8 </**compskill>

9 <**/**skill>

**10** <expr**>**

**11** <programer**>2<**/programer**>**

12 <projmngr>5</projmngr>

13 </expr>

14 <objective**>**become success full</objective>

**15<**/**EMP>**'));

SQL>Insert **into** candidate values(**05,**XMLTYPE('<EMP ID=**"5">**

2 <**name>**Suraj<**/**name**>**

**3 <**address**>**Chembur</address**>**

**4** <skill>

**5** <compskill>

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**Shaikh Salma Manjar**

6 <lang**>**.net</lang>

**7 <**os>Window</**os>**

8 </compskill>

9 </skill**>**

10 <expr**>**

11 <programer>4<**/**programer>

12 <projmngr>6</projmngr**>**

13 </expr>

**14** <objective**>**become **success** full</**objective> 15** </EMP>'));

SQL> select \* from candidate;

CAND\_ID

BIODATA

**1**

<EMP **ID=**"1">

<name>Anjali</name**>**

<address**>**anjali3@gmail.com</**address>**

**<**ski

**2**

<EMP **ID="2"**>

<name**>**Harry</name>

**CAND\_ID**

BIODATA

<address>Thane</address>

**<**skill>

**<**comp

3

<EMP **ID="3"**>

**<**name>Samar</name> <address**>**Nerul</address**>**

**<**skill>

**CAND\_ID**

BIODATA

**4**

<EMP **ID="4"**>

<name**>Sunny**</name>

**<**comp

**272**

**32**

**Shaikh Salma Manjar**

<address**>**Kalyan</address**>**

<skill>

<**com**

CAND\_ID

BIODATA

<EMP **ID**="**5**">

**<**name**>**Suraj</name> **<**address**>**Chembur<**/**address**>**

**<**skill>

**<co**

**5**

**a) Display candidate name who is good in java and having experience more**

**than 5 years**

SQL>select c.biodata.extract('EMP/name/text()')"employee name**"** from candidate **c** where c.biodata.extract('EMP**/**skill/compskill**/**lang/text()')**.**GetStringVal()='java' and (c.biodata.extract('EMP/expr**/**programer/text()').GetStringVal()>'**5**' or c.biodata.extract('EMP/expr/projmngr/text()').GetStringVal()>'5');

employee name

**b) Display candidate having project manager** level **experience**

**Harry**

SQL**>**select c.biodata.extract('EMP**/**name/text()')"employee name" from candidate **c** where c.biodata.extract('EMP/expr/projmngr/text()').GetStringVal()>'**5'**; employee name

**c) Display name and** skill **of all candidates**

SQL**>select** c.biodata.extract('EMP**/**name/text()')"employee

Suraj

name",c.biodata.extract('EMP**/**skill/compskill/lang/text()')"computer skill**",**c.biodata.extract('EMP**/**skill/compskill/os/text()')"**Os"** from **candidate**

**C;**

employee name

**skill**

Os

**C**++

**Window**

computer

Anjali

**272**

**33**

**Shaikh Salma Manjar**

**Harry** java

Window

employee name

**skill**

**Os**

**Samar**

**C**

Window

Sunny

**csharp**

employee name

skill

Os

Suraj

.net

Window

computer

computer

Window

**d) Delete record for address = Chembur**

SQL>**delete from** candidate c where

c.biodata.extract('EMP**/**address/text()').getStringVal()='Chembur';

1 row deleted.

SQL**>** select \* from candidate;

**CAND\_ID**

BIODATA

<EMP **ID**="**1**">

**<**name>Anjali**<**/name**>**

<address**>**anjali3@gmail.com</**address**>

**<ski**

**2**

<EMP **ID="2**">

<name**>Harry**</name**>**

1

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**Shaikh Salma Manjar**

**CAND\_ID**

BIODATA

<**address**>Thane</address**>**

**<**skill>

**<**comp

3

<EMP **ID="3"**>

**<**name**>**Samar<**/**name>

**<**address**>**Nerul</address**>**

<skill>

**CAND\_ID**

BIODATA

<**comp**

**4**

<EMP **ID="4"**>

<name>**Sunny</**name**>**

**<**address>Kalyan</address**>**

**<**skill>

**<**com

**e) Update experience of** a **particular candidate**

SQL>**update** candidate c **set** biodata =

UPDATEXML(biodata,'**/**Emp/ID/text()','4**')** where c.biodata.extract('Emp/ expr/ programer/text()').GetStringVal()=**'3**';

1 row updated.

SQL> select \* from candidate;

**CAND\_ID**

BIODATA

1

<EMP **ID="**1">

<name>Anjali**<**/name>

<address>**anjali3@gmail.com**</address**>**

**<**ski

2

<EMP **ID="2"**>

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**35**

**Shaikh Salma Manjar**

<name**>Harry**<**/**name**>**

**CAND\_ID**

BIODATA

**<**address>Thane</address**>**

**<**skill>

**<**comp

**3**

<EMP **ID**=**"3"**>

<name>Samar</name>

<address>Nerul<**/**address**>**

<skill>

**CAND\_ID**

BIODATA

**272**

<comp

4

<EMP **ID="4"**>

<name**>Sunny</name>** <address>Kalyan</address>

**<**skill>

<com

**36**